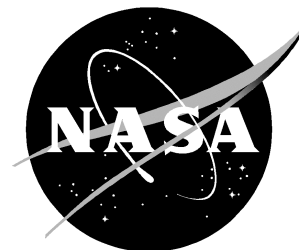


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NEW NASA SAFETY ASSURANCE ORGANIZATION REPORTS ON INITIAL ASSESSMENTS

The NASA Engineering and Safety Center (NESC) reported on the results of its initial assessments to senior NASA officials today. The Center was created after the Space Shuttle Columbia accident to serve as a source of technical expertise for evaluating the merits of technical concerns identified by NASA managers and employees. These assessments are performed from a source of funding that is not directly linked to any single NASA program or project and therefore free from any programmatic bias of schedule or cost.

Results of the Center's four "Pathfinder" studies were reported to senior NASA leadership from around the country at a meeting at NASA Headquarters. The reporting approach -- proactively sharing lessons learned -- was modeled after a similar method used by the U.S. Navy Board of Inspection and Survey.

The NESC was created in November 2003 to improve safety by performing in-depth independent engineering assessments, testing, analyses and evaluation to uncover technical vulnerabilities and to recommend appropriate preventative and corrective actions for problems, trends or concerns within NASA's programs, projects and institutions.

"I feel very good about what we've accomplished in our first six months," said Ralph Roe, NESC director, based at NASA Langley Research Center, Hampton, Va. "We have a talented core of people working within NESC and an outstanding group of people matrixed to NESC that we can call upon when needed. We have positive feedback from the partnerships we've begun with industry and academia. We've completed our first four technical assessments; we're working on several new major activities, and requests for our services keep coming in," he added.

While the NESC's current focus is on a successful Space Shuttle return to flight and the International Space Station, it is involved in other activities across NASA. For example,

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NESC is providing independent expertise for the Cassini Saturn Orbit Insertion critical events readiness review.

The initial assessments were related to four wide-ranging projects:

- Cloud-Aerosol Light Detection and Ranging (LIDAR) and Infrared Pathfinder Satellite Observation (CALIPSO) spacecraft, an Earth Science satellite set to launch in 2005
- X-43A, a hypersonic research vehicle that made news with a successful flight in March
- Space Shuttle orbiter rudder/speed brake system
- Mars Exploration Rovers, now exploring the surface of Mars

In the case of CALIPSO, a joint science mission that includes NASA and the French space agency, a concern about possible leaks of the spacecraft's highly-reactive fuel from joints in the fuel lines during ground processing led to multiple recommendations to minimize risk to personnel, the mission and the environment.

The record-breaking hypersonic X-43A did not fly until a dissenting opinion by one X-43A team member was properly addressed. The employee contacted the NESC with a concern that the research vehicle's aerodynamic characteristics could potentially lead to a loss of vehicle control, resulting in failure to achieve mission objectives. The NESC worked in conjunction with the X-43A project to ensure that the employee's concern was properly addressed.

During renewal of hardware in a Space Shuttle orbiter rudder/speed brake system, a concern was raised about the effectiveness of grease in the gear set of the replacement hardware that had been retrieved from long-term storage. NESC conducted extensive tests and analyses to determine that the grease is still effective. A lesson learned was that programs should periodically review hardware components to ensure that qualification and certification limits are not exceeded.

Prior to the two Mars Exploration Rover landings on Mars in January, the NESC participated in two program reviews. One review dealt with the very human challenge of supporting round-the-clock staffing for a mission to Mars, where the Martian day is 40 minutes longer than an Earth day. The second review looked at entry, descent and landing data from the first rover landing as a guide to fine-tuning the entry, descent and landing of the second rover. While both landings were highly successful, the review revealed that current spacecraft instrumentation was not designed to adequately record the aerodynamic environment encountered during descent.

Summaries of the four Pathfinder reports, a video clip, publication quality images and additional information about NESC are available on the Internet at:

<http://nesc.nasa.gov/activities.html>